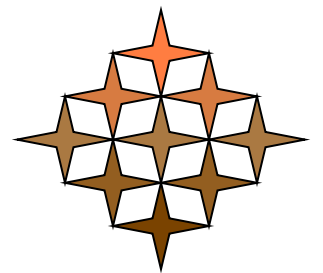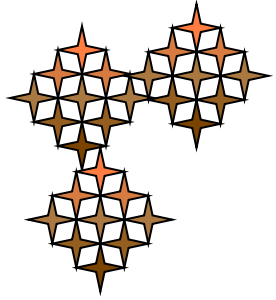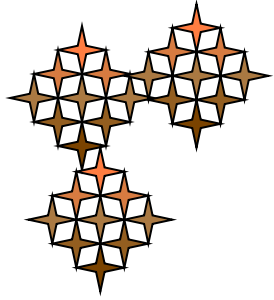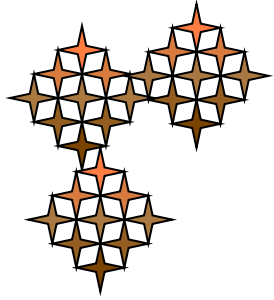# Grid Computing Support

Eileen Berman

Why am I here?

- To talk about resources available to help you use the grid.
- Learn what you do
- Start a dialogue

Success helping D0

- Sustained, more effective, ongoing Monte Carlo Grid jobs
  - Collaborative effort between D0, Fermilab Grid Support and OSG
  - Success
- Could this model help with Analysis Grid jobs?

GRID Facilities Mission Statement

To establish and maintain Fermilab as a high performance, robust, highly available, expertly supported and documented Premier Grid Facility which supports the scientific program based on Computing Division and Laboratory priorities.
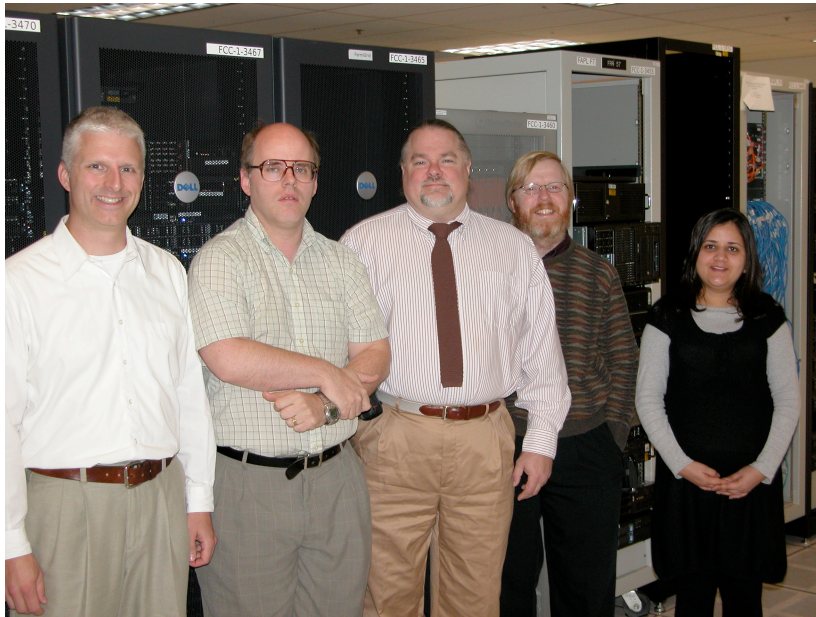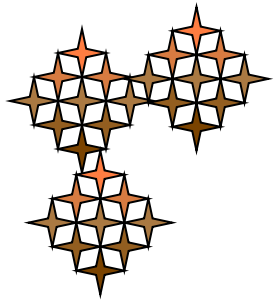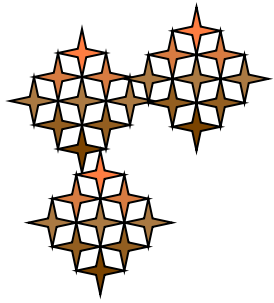
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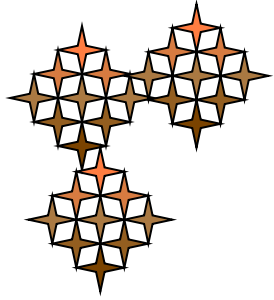
The department provides production infrastructure and software, together with leading edge and innovative computing solutions, to meet the needs of the Fermilab Grid community and takes a strong leadership role in the development and operation of the global computing infrastructure of the Open Science Grid.
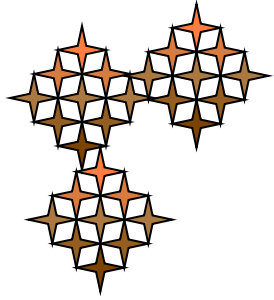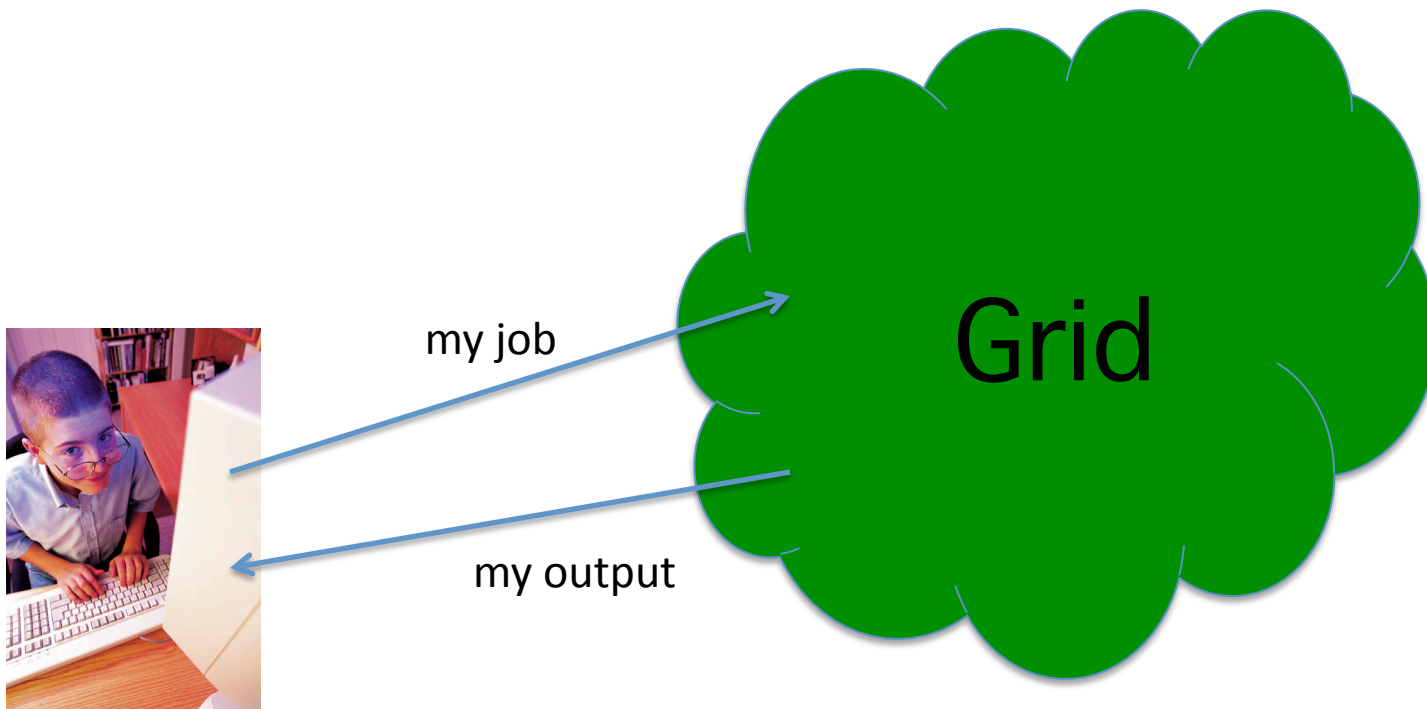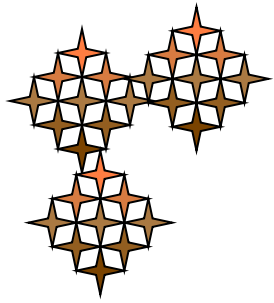
Briefly This Means

- Fermilab Campus Grid (FermiGrid) Operations, Support, Help, Development, & Integration

- Gateway to Open Science Grid (OSG)

- Grid Middleware Integration, Development, Support, & Help

- Contribute to the OSG in accordance with the needs of the Fermilab Grid community
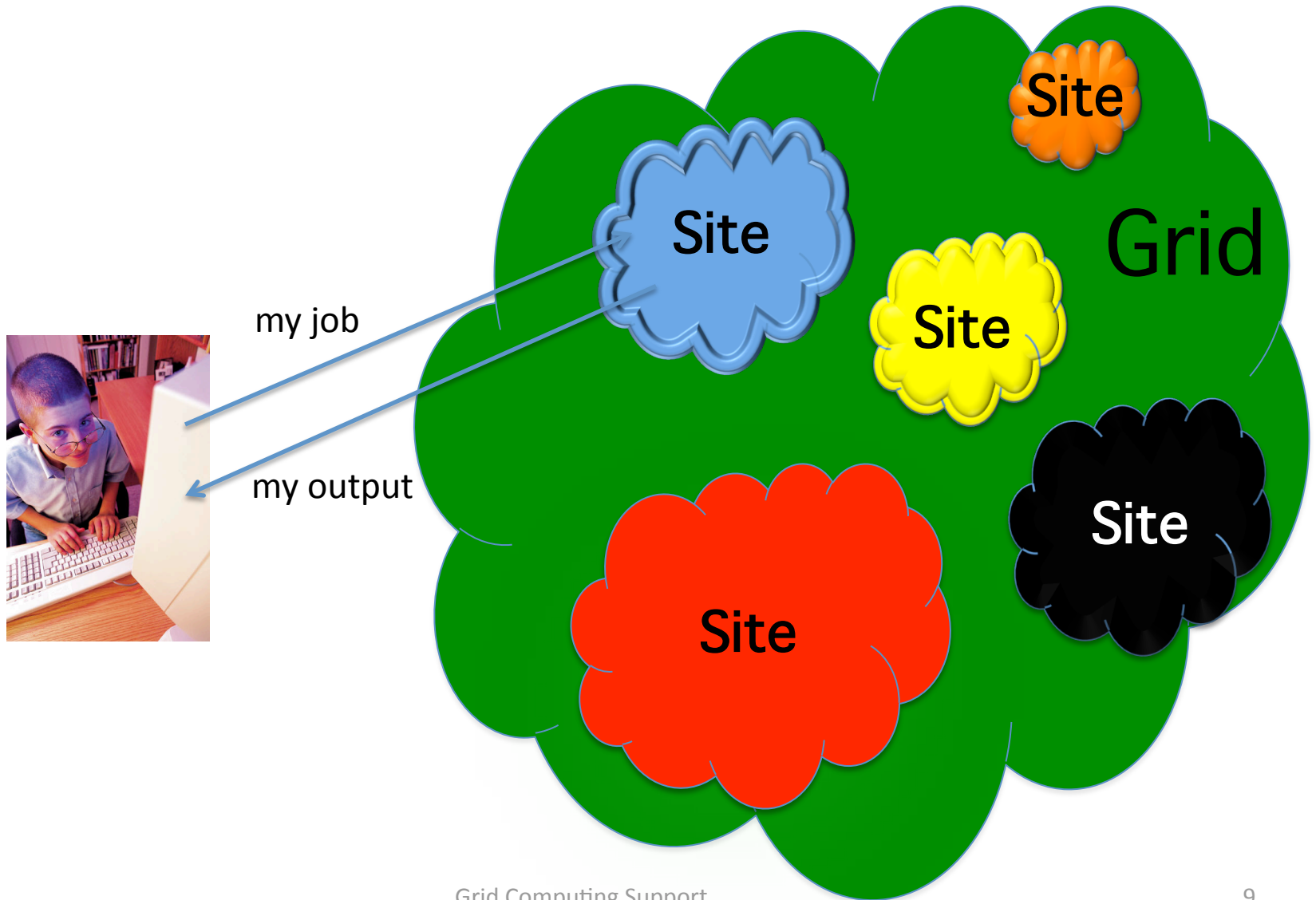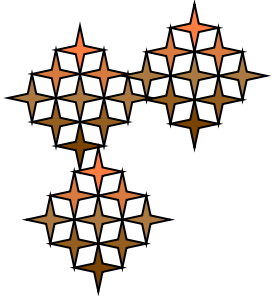
```
                    Eileen
                    Berman
          ┌────────────┴────────────┐
       Keith                    Gabriele
      Chadwick                  Garzoglio
       ├─ Steve Timm            ├─ Tanya
       │                        │  Levshina
       ├─ Neha                  ├─ Andrew
       │  Sharma                │  Baranowski
       └─ Dan Yocum             ├─ Dave
                                │  Dykstra
                                ├─ Chris Green
                                ├─ Ted
                                │  Hesselroth
                                ├─ Parag
                                │  Mhashilkar
                                └─ Igor Sfiligoi
```

The Dream

my job

Grid

my output

What Often Happens

my job

my output

Grid

Site

Site

Site

Site

Site

Grid Computing Support
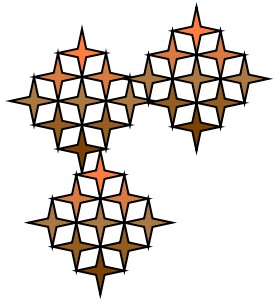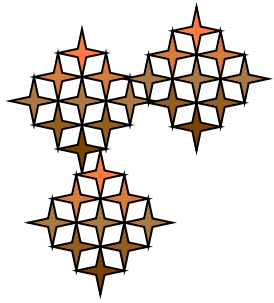
What is the Grid?

- Heterogeneous, highly distributed, loosely coupled resources
  - Policies: often site specific
    - Policy matching project starting
    - Advertised policies not necessarily implemented policies – everyone is busy, this is HARD
  - Management: often site specific
    - Common management model does exist
- Monitoring tools, batch systems, priorities are often different across sites

ANY Problem/Question

DO Support center is currently the FermiGrid staff and Adam Lyon – this needs updating
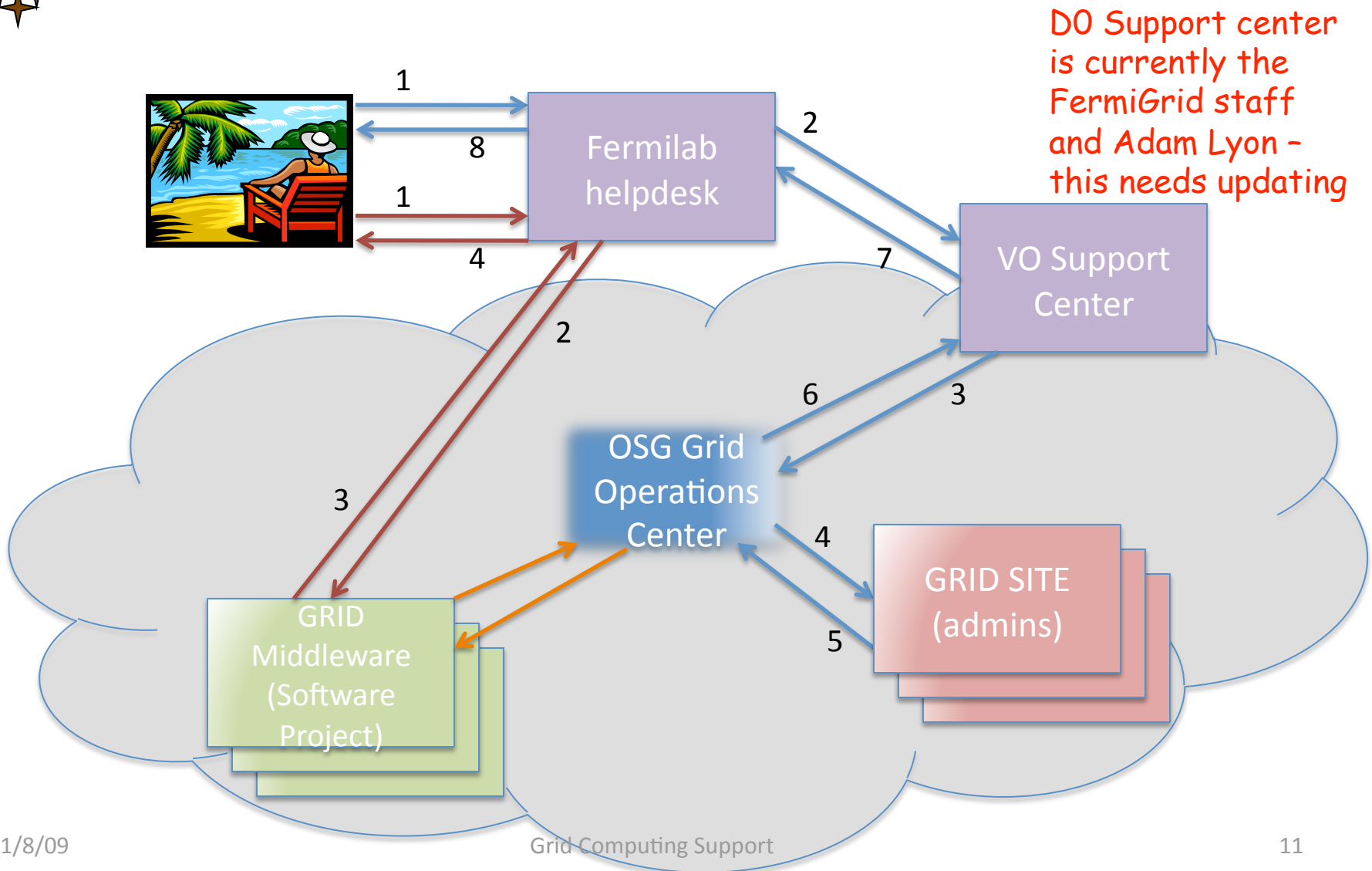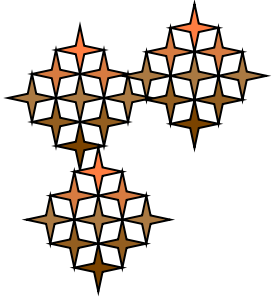
More Help

- Grid users meeting
  - Alternate Monday's, 3:30, fcc1 (next one Jan 12) **(start here)**
- Grid School – Introduction, Running jobs, using Storage

  Grid Facilities can help!!
- OSG VO phone meeting, every Thurs 1:30, (510) 665-5437, Meeting ID 1111

More Help

- Mailing lists for grid users at Fermi
  - fermigrid-announce@listserv.fnal.gov
  - fermigrid-users@listserv.fnal.gov - community support
  - osg-general@opensciencegrid.org - osg information and questions
- OSG documentation twiki   *OSG can help!!*
  - http://twiki.grid.iu.edu/bin/view/Documentation/WebHome
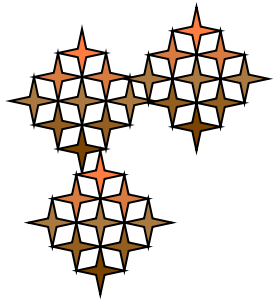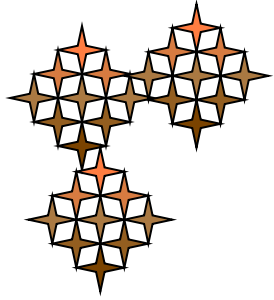
Tools to help you

- ReSS – Resource Selection Service
  - Matches jobs to sites
  - RESS project works with users to discuss the best algorithms
  - Run as part of the OSG Grid middleware software stack
  - https://osg-ress-1.fnal.gov:8443/ReSS/ReSS-prd-History.html

Grid Facilities can help!!

- OSG MatchMaker (MM)
  - Based on ReSS
  - Hides some details from you
  - Runs a daemon on submit node
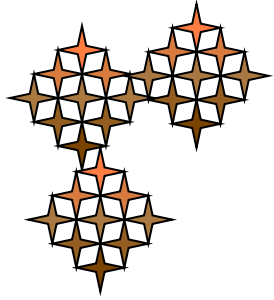 - http://sourceforge.net/projects/osgmm/ to get source and help

OSG can help!!

Monitoring Tools

- FermiGrid Grid School 201
  - Introduction to condor_q and other monitoring
  - https://cd-docdb.fnal.gov:440/cgi-bin/ShowDocument?docid=2615

Grid Facilities can help!!

**Take Grid School classes when offered!**

Workload Management System

- Responsible for the distribution and management of jobs across Grid resources
- Several at Fermi use glidein WMS
  - CDF
    - Production, Analysis, Monte Carlo
  - CMS
    - Monte Carlo (production)
    - Analysis (integration)
  - MINOS
    - Analysis
- Involves VO support
- Includes monitoring
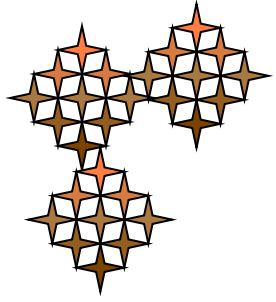- http://www.uscms.org/SoftwareComputing/Grid/WMS/glideinWMS/

Grid Facilities can help!!
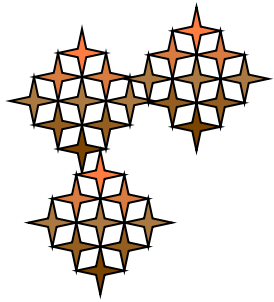
Glidein WMS
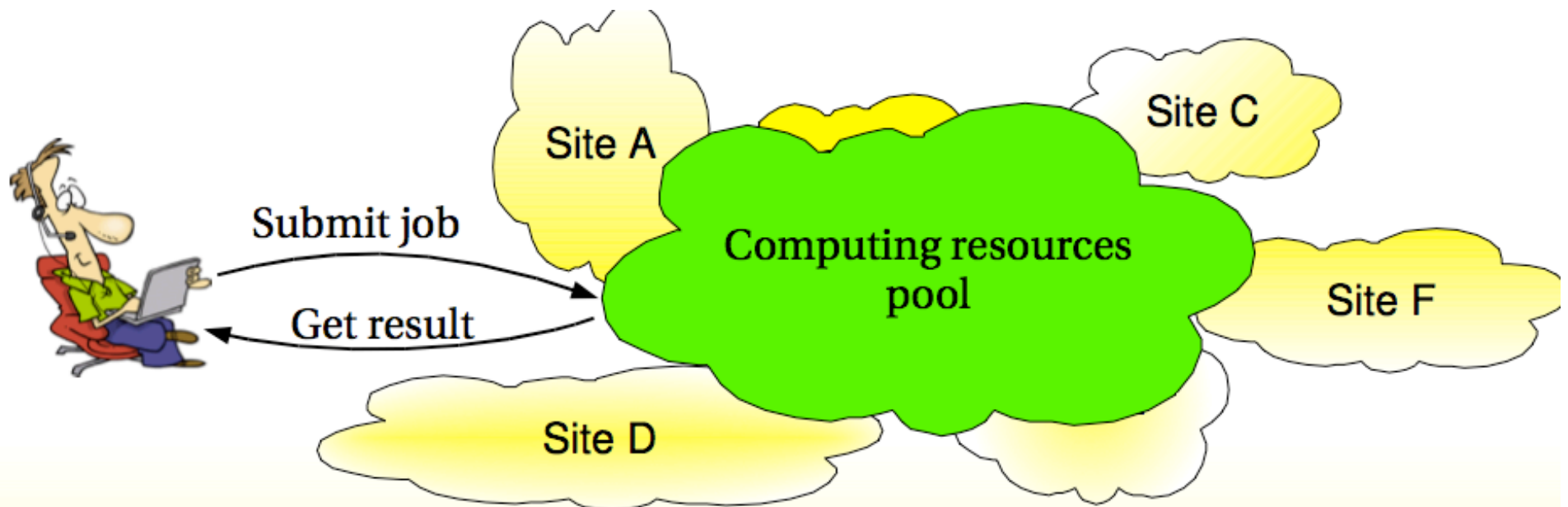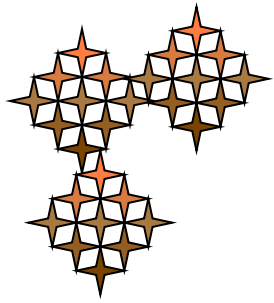
NOW….

- Let's talk about what you need.
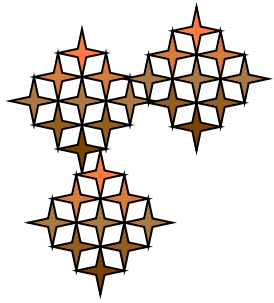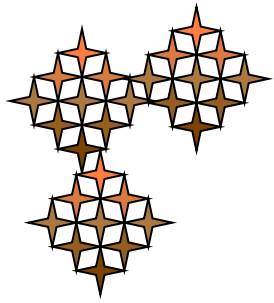
Backup Slides

FermiGrid

Grid Computing Support
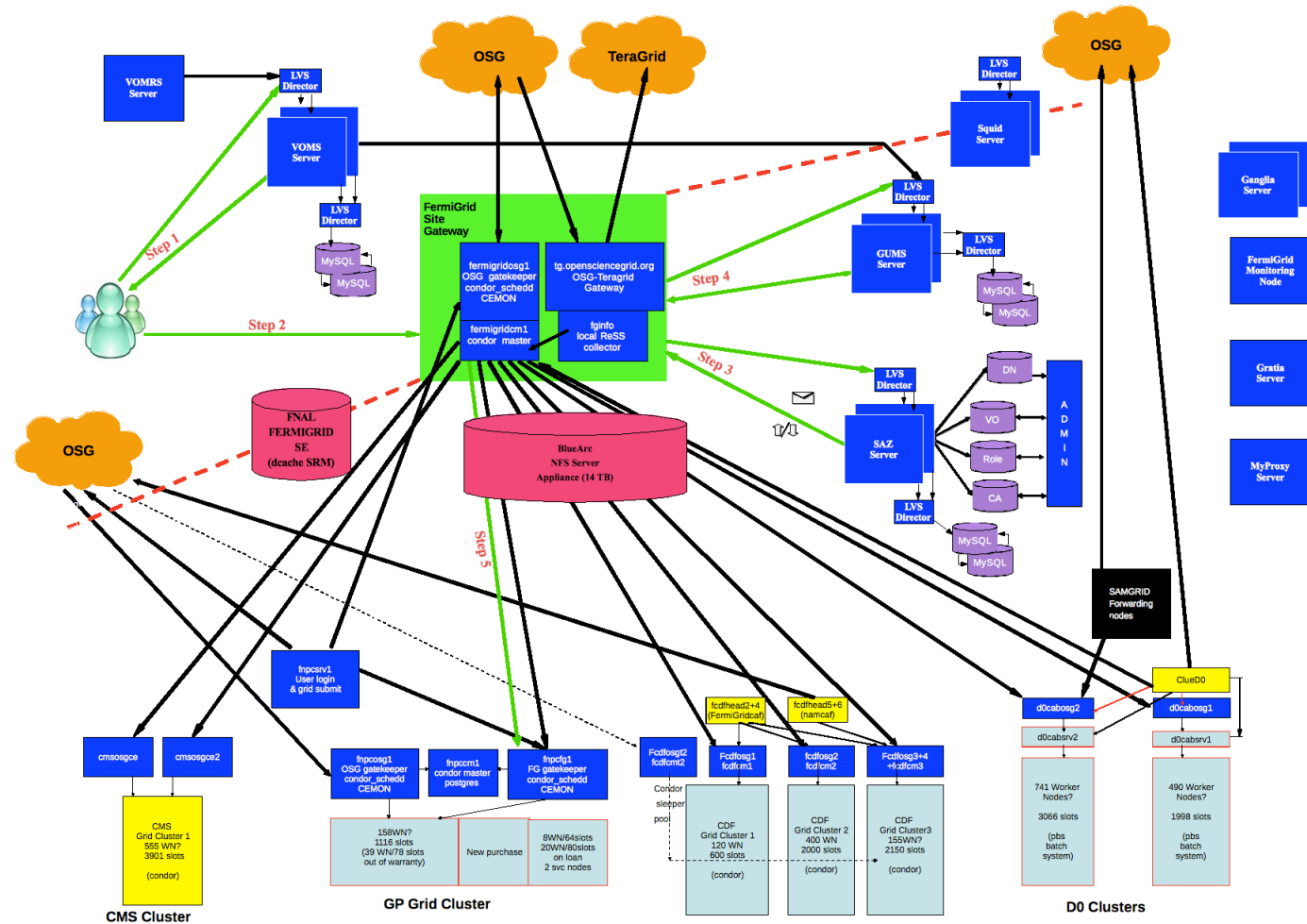
Collaborations

- OSG
- EGEE
- Globus
- Condor
- VDT
- BNL
- TechX